

Material Safety Data Sheet

According to Regulation (EC) No. 1907/2006

1 Identification of substance:

- **Product details:**
- **Product name:** Cadmium Telluride, powder, 2-7 nm, 99,9+%
- **Stock number:** PL-QDN
- **Manufacturer/Supplier:**
PlasmaChem GmbH, Berlin
Rudower Ch. 29, D-12489
Tel.: 030 6392-6313

Version 2.1, Revision Date: 23.02.2015

2 Hazards identification

- **Classification of the substance or mixture**
Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410
Classification according to EU Directives 67/548/EEC or 1999/45/EC
N Dangerous for the environment R50/53
Xn Harmful R20/21/22 Xn Harmful R20/21/22
N Dangerous for the environment R50/53
For the full text of the R-phrases mentioned in this Section, see Section 15

- **Label elements**

Labelling according Regulation (EC) No 1272/2008

Pictogram:



Signal word:	Warning
Hazard statement(s)	
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P501	Dispose of contents/ container to an approved waste disposal plant.
Supplemental Hazard Statements	none

- **Other hazards** – none

3 Composition/Data on components:

- **Chemical characterization:**

Description: (CAS#)

Cadmium Telluride, powder, 2-7 nm, CdTe (CAS# 1306-25-8):

inorganic content : > 50%, Organic ligands (CAS# -): <50%

• **Identification number(s):**

EC Number: 215-149-9

Index-No.: 048-001-00-5

4 First aid measures

• **After inhalation**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

• **After skin contact**

Immediately wash with water and soap and rinse thoroughly.

• **After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

• **After swallowing**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

• **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

5 Fire fighting measures

• **Extinguishing media**

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

• **Special hazards arising from the substance or mixture**

Cadmium/cadmium oxides, Tellurium oxides

• **Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

• **Further information**

no data available

6 Accidental release measures

• **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Avoid breathing dust. Keep away from ignition sources

• **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

• **Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

• **Reference to other sections**

For disposal see section 13.

7 Handling and storage

• **Handling**

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace.

• **Information about storage in one common storage facility:**

Do not store together with acids.

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

Do not freeze. Light sensitive.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**

Use only in a chemical fume hood. Safety shower and eye bath.

- **Personal protective equipment**

- **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing and shoes.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

Use suitable respirator when high concentrations are present.

- **Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

- **Eye protection:** Safety glasses

- **Body protection:** Protective work clothing.

9 Physical and chemical properties:

- **General Information**

- **Form:** Powder

- **Color:** Green to red

- **Odor:** NA

-

	<u>Value/Range</u>	<u>Unit</u>
--	---------------------------	--------------------

- **Change in condition**

- **Melting point/Melting range:** 1.092 °C

- **Boiling point/Boiling range:** 1.130 °C

- **Sublimation temperature / start:** Not determined

- **Flash point:** Not determined

- **Flammability (solid, gaseous)** Not determined

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined

- **Explosion limits:**

- **Lower:** Not determined

- **Upper:** Not determined

- **Vapor pressure:** Not determined

- **Relative density:** 6,200 g/cm³

- **Solubility in / Miscibility with Water:** Soluble

10 Stability and reactivity

- **Reactivity**

no data available

- **Chemical stability**

Stable under recommended storage conditions.

- **Possibility of hazardous reactions**

no data available

- **Conditions to avoid**

no data available

- **Incompatible materials**
Strong oxidizing agents, Strong acids
- **Hazardous decomposition products**
Other decomposition products - no data available
- **In the event of fire: see section 5**

11 Toxicological information

- **Information on toxicological effects**
Acute toxicity: no data available
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation:
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Chronic exposure to cadmium may cause lung and prostate cancer.
IARC: 1 - Group 1: Carcinogenic to humans (Cadmium telluride)
Reproductive toxicity
no data available
Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
Specific target organ toxicity - single exposure
no data available
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Additional Information
RTECS: Not available
Acute inhalation exposure to cadmium fumes may cause "metal fume fever" with flu-like symptoms of weakness, fever, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough and difficulty breathing. Acute pulmonary edema may develop within 24 hours and reaches a maximum by three days. The first chronic effect of exposure to cadmium is generally kidney damage, manifested by excretion of excessive protein in the urine, followed by anemia, teeth discoloration and loss of smell.
Cadmium also is believed to cause pulmonary emphysema and bone disease.

12 Ecological information:

- **Toxicity**
no data available
- **Persistence and degradability**
no data available
- **Bioaccumulative potential**
no data available
- **Mobility in soil**
no data available
- **Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
- **Other adverse effects**
Very toxic to aquatic life with long lasting effects.

13 Disposal considerations

• **Waste treatment methods**

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14 Transport information

• **UN number**

ADR/RID: 2570 IMDG: 2570 IATA: 2570

• **UN proper shipping name**

ADR/RID: CADMIUM COMPOUND (Cadmium telluride)

IMDG: CADMIUM COMPOUND (Cadmium telluride)

IATA: Cadmium compound (Cadmium telluride)

• **Transport hazard class(es)**

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

• **Packaging group**

ADR/RID: III IMDG: III IATA: III

• **Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

• **Special precautions for user**

no data available

15 Regulations

• **Risk phrases:**

20/21/22-50/53

Harmful by inhalation, in contact with skin and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

• **Safety phrases:** 60-61

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment. Refer to special instructions/safety data sheets.

16 Other information:

- Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

• **Disclaimer:**

For R&D use only. Not for drug, household or other uses.